Videolyzer: An Interactive Platform for Making Videos Persuasive

Sanorita Dey
University of Illinois at Urbana-Champaign
201 N. Goodwin Ave,
Urbana, IL 61801 USA
sdey4@illinois.edu

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the Owner/Author. Copyright is held by the owner/author(s).
IUI'17 Companion, March 13-16, 2017, Limassol, Cyprus.
ACM 978-1-4503-4893-5/17/03.
http://dx.doi.org/10.1145/3030024.3038279

Abstract
The success of a crowdfunding campaign depends largely on the persuasiveness of the campaign materials. One of the most persuasive campaign materials is the campaign video. However, novice campaign owners face many challenges in making persuasive promotional videos for their campaigns. To address this issue, we propose an interactive platform called Videolyzer that allows video creators to explore, analyze, and visualize the underlying persuasion factors most relevant to their products. The key component of the platform involves data science techniques that extract meaningful patterns from relevant marketing videos.

Author Keywords
Crowdfunding; persuasive factors; campaign video; crowdsourced rating.

ACM Classification Keywords
H.5.m [Information interfaces and presentation]: Miscellaneous

Introduction
A video is a powerful communication channel for connecting emotionally with the audience [2]. Its storytelling power helps create an emotional bond with the audience, which leads to better brand recognition, association with desirable attributes, and eventually, better sales. The power of

video seems equally strong in crowdfunding, as research has found that the mere presence of a video positively influenced donors to pledge their money for a campaign[4]. Kickstarter, a leading crowdfunding platform, specifically stresses the importance of videos [3] by suggesting campaign creators include a video that describes “the story behind the project." Recognizing the importance of campaign videos, Kickstarter also makes “project video analytics” [1] available to let project creators know how many times their video was played and what percentage of the visitors played through the entire video.

However, making promotional videos is not always straightforward. Existing marketing literature often provides a single set of persuasive factors for creating marketing videos, which are often insufficient to address the whole spectrum of advertising effects. Our studies and others have shown, for example, that the goal of advertising products is often more than increasing short-term sales. Rather, marketing and advertising may involve multiple persuasion processes that lead to successful brand building and recognition, which moderate the sales and other desirable outcomes over time. To address this issue, we propose an interactive platform called Videolyzer that allows video creators to explore, analyze, and visualize the underlying persuasion factors most relevant to their products. The key component of the platform involves data science techniques that extract meaningful patterns from relevant marketing data, which can be interactively visualized to augment the cognitive processes involved in creating persuasive marketing videos. This platform can be extended by utilizing data from companies such as Nielsen to generate profiles for different marketing platforms.

The proposed project will involve several cycles of systematic proof-of-concept development and user testing. We will begin with an existing dataset collected from Kickstarter, a crowdfunding platform that helps entrepreneurs bring creative products to life. The dataset has over 70K projects, including all project details such as campaign videos, minute-by-minute dynamic donation data, and final outcomes. This dataset allows us to experiment with multiple data analysis techniques to extract patterns that are most predictive of success. We will develop an interactive interface that will utilize these patterns to allow users to explore and compare past projects to identify the persuasion strategies most effective for their marketing goals. Before we explain the details of this interactive tool, we will first describe a recent study to highlight the main ideas behind this platform.

Previous Study

To understand whether marketing videos can be profiled based on the characteristics of the products, we conducted a user study on 210 Kickstarter campaign videos collected from three different product categories: technology, design, and fashion. Based on advertising literature [5], we tested a range of persuasive factors, including: 1) creativity, 2) involvement, 3) perceived product complexity, 4) purchase intent, 5) audio/video quality, 6) attitude towards the video, and 7) perception of duration. To evaluate 210 campaign videos, we recruited 3150 workers from Amazon Mechanical Turk (MTurk). Each video was rated by 15 MTurk workers. They were asked to provide ratings on the above mentioned persuasive factors. We analyzed the responses of the MTurk workers using a logistic regression model and found that we could predict up to about 60% of the successes of these projects based on these factors. More importantly, we found that projects in different categories had different âĂIJprofiles of persuasive factors.âĂİ For example, utility and relevance of the products in the technology category were most predictive of success, while the appearance of the speaker and the quality of the audio and video were

most predictive for products in the design and fashion categories. These results provided support to the notion that 1) predictive models can be developed based on a profile of persuasive factors extracted from marketing videos, 2) different products have different predictors of success, which can be harnessed to optimize marketing strategies, and 3) identifying persuasive factors may involve iterative settings of goals, exploration and analysis of past successes, and testing and evaluation of different strategies.

Design of the Project

Data Extraction

We will analyze and extract patterns from 71,588 marketing videos across 15 different product categories of Kickstarter such as technology, games, arts, film, fashion, design, music, craft, food, photography, comics, theater, dance, publishing, and journalism.

Feature Identification

Our next step will be to identify persuasive factors that can be used to develop quantitative profiles for marketing videos in each product category. We will start with seven well-established persuasion factors from advertising literature and expand this set by performing iterative clustering of the factors identified from various videos. For example, âĂŸbrand equityâĂŹ is an important feature in advertising since it can explain how a product becomes memorable over all other similar products, especially when 10 different marketing videos advertise similar products (such as womenâĂŹs flat shoes) at the same time.

In the preliminary study, we found that MTurk workers did not want to donate money to the crowdfunding campaign of someone who already had a modest source of funding just to receive the product in return. Instead, they perceived themselves as the catalysts for creation. Their role as an investor in addition to a consumer made them desire more seriousness than humor in campaign videos. This shows that in some special cases, backers of crowdfunding campaigns may have completely different expectations than television advertisement viewers. Our goal is to identify those scenarios and capture appropriate persuasion features within our expanded feature set.

Subjective Evaluation

To help develop profiles of the marketing videos, we will recruit MTurk workers to provide subjective evaluation for a subset of the videos, and we will build classifiers based on these human ratings. By choosing MTurk workers for the evaluation process, we will have access to a large number of workers at a reasonable cost. We will also collect free-formed response comments about their experiences watching the videos to identify the new features (if any) missed in the initial feature identification process.

Video Analytics Tool Creation

Based on the subjective ratings, we will build a prototype of Videolyzer, which will host aggregated analytical profiles of the marketing videos for each type of product. Each profile of our analytics tool will be defined based on the weights of the persuasion features, which will be measured using the subjective ratings provided by MTurk workers. This web-based tool will assist users by visualizing the predictive features of the marketing videos based on specific product types. Users can also specify a set of features that they find most relevant, and the platform will provide suggestions based on past projects most relevant to these features. Users can iteratively select different past projects and the platform will perform analysis based on the selected set. Different profiles will be generated based on customized marketing goals. This will be a scalable solution for analyzing video analytics since the analytical profiles of the new

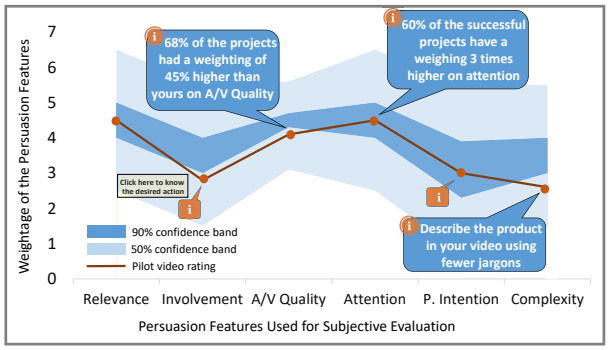

Figure 1: The figure shows the weights of the persuasion factors at different confidence levels. We used these factors to analyze campaign videos in our study.

marketing videos will be aggregated with the existing profiles.

Our video analytics tool can also be extended to allow users to receive feedback on their own marketing videos. Figure 1 is an illustrative figure showing video profiles for a product category at different confidence levels. To collect feedback, we will not only gather ratings from the MTurk users but also ask each user to choose a limited number of his/her friends from social media, who will be requested to participate in the rating process. Including usersâĂŹ online friends in the analysis will allow us to collect ratings from a subset of campaign owners' social connections, who will be more likely than random MTurk workers to contribute (either by donating or by sharing or both) to the campaign's success.

The red line in Figure 1 represents a sample rating curve of a pilot video posted by a user based on the aggregated ratings of the MTurk users and the user's social media friends.

At the backend, we will create a temporary persuasion profile for each pilot video and match the profile with the existing profiles already stored in our system (shown in Figure 1 as confidence bands). For different persuasion features, the interface will provide appropriate suggestions at-a-glance through the expandable callout boxes. We will also generate a detailed feedback report for the pilot videos based on the matching process. This report will not only be useful for determining the strengths of the videos, but will also show users what features need to be included to make the video more persuasive to the audience, along with suggestions to eliminate the shortcomings in the videos such as adjusting the volume of background music. In future, this video analysis tool can also be extended to modify non-profit promotional videos in medical and scientific crowdfunding campaigns which are gaining popularity among the crowdfunding community.

REFERENCES

1. Fred Benenson and Yancey Strickler. 2012. Creator Video Analytics https://www.kickstarter.com/blog/creatorvideoanalytics. (7 June 2012).
2. Thomas Clark and Julie Stewart. 2007. Promoting academic programs using online videos. *Business Communication Quarterly* 70, 4 (2007), 478.
3. Kichstarter. 2016. Creator Handbook: Getting Started https://www.kickstarter.com/help/handbook/getting_started. (2016).
4. Ethan Mollick. 2014. The dynamics of crowdfunding: An exploratory study. *Journal of Business Venturing* 29, 1 (2014), 1–16.
5. William D Wells. 2014. *Measuring advertising effectiveness*. Psychology Press.